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A METHOD FOR SELECTING FRAME ENCODING PARAMETERS TO IMPROVE
TRANSMISSION PERFORMANCE IN A FRAME-BASED COMMUNICATIONS NETWORK

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ABSTRACT OF THE DISCLOSURE

A method for selecting frame encoding parameters to improve
transmission performance for a transmitting frame being
transmitted from a transmitting station to a receiving station
10 over a transmission medium of a frame-based communications
network, the transmitting frame having a header segment and a
payload segment, the header segment being transmitted using a
fixed set of encoding parameters such that the header segment can
be received and decoded by all stations on the network, the
15 payload segment being transmitted using a variable set of payload
encoding parameters, the transmitting station sending the
transmitting frame using one set of the variable set of payload
encoding parameters at a time. The receiving station receives and
decodes the header and payload segments of each transmitting
20 frame. The decoding includes computing frame statistics. A
plurality of sets are selected from the variable set of payload
encoding parameters to form a possible set of payload encoding
parameters. For each set of payload encoding parameters in the
possible set of payload encoding parameters, an estimate of
25 network performance characteristics expected if the transmitting
station were to transmit the transmitting frame using that set
of payload encoding parameters is generated based upon the frame
statistics. A set of payload encoding parameters having optimized
network performance characteristics is selected based upon
30 estimates of expected network performance for each set of payload
encoding parameters in the possible set of payload encoding
parameters. The frame statistics include a slicer maximum squared
error for the header segment and a slicer maximum squared error
for the payload segment.

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